



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Northwest Region  
7600 Sand Point Way N.E., Bldg. 1  
Seattle, WA 98115

Refer to:  
2002/00391

May 13, 2003

Lawrence C. Evans  
ATTN: Mary J. Headly  
Army Corps of Engineers, Portland District  
PO Box 2946  
Portland, OR 97208-2946

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Mills Dam Fish Passage Improvement Project, Hood River Subbasin, Columbia River Basin, Hood River County, Oregon (Corps No. 200101015)

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of the proposed Mills Dam Fish Passage Improvement Project, Hood River Subbasin, Columbia River Basin, Hood River County, Oregon (Corps No. 200101015). In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of ESA-listed Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*). As required by section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with nondiscretionary terms and conditions that NOAA Fisheries believes are necessary to minimize the impact of incidental take associated with this action.

This document also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulations (50 CFR Part 600). The Hood River subbasin is designated as EFH for chinook (*Oncorhynchus tshawytscha*) and coho (*O. kisutch*) salmon.

If you have any questions regarding this letter, please contact Scott Hoefer of my staff in the Oregon Habitat Branch at 503.231.6938.

Sincerely,

D. Robert Lohn  
Regional Administrator



cc: Steve Pribyl, ODFW  
Holly Coccoli, Hood River Watershed Council  
Anne Saxby, Hood River SWCD  
Bob Progulske, USFWS

# Endangered Species Act - Section 7 Consultation Biological Opinion

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## Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation

Mills Dam Fish Passage Improvement Project,  
Hood River Subbasin, Columbia River Basin, Hood River County, Oregon  
(Corps No. 200101015)

Agency: U.S. Corps of Engineers, Portland District

Consultation  
Conducted By: NOAA's National Marine Fisheries Service,  
Northwest Region

Date Issued: May 13, 2003

Issued by:

A handwritten signature in black ink, appearing to read "D. Robert Lohn" followed by a flourish.

D. Robert Lohn  
Regional Administrator

Refer to: 2002/00391

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# 1. INTRODUCTION

## 1.1 Background and Consultation History

On February 28, 2002, NOAA's National Marine Fisheries Service (NOAA Fisheries) received a biological assessment (BA) from the Corps of Engineers (COE) and a written request for concurrence with a finding that the project is "not likely to adversely affect" (NLAA) Middle Columbia River (MCR) steelhead (*Onchorynchus mykiss*).

On April 5, 2002, the COE inquired about the status of this project. In response, NOAA Fisheries requested an additional copy of the request for consultation due to an administrative error. NOAA Fisheries received the additional copy on April 18, 2002. Numerous phone, e-mail and other communications occurred between April 18, 2002, and November 19, 2002, including site visits to the proposed project area with the Hood County Watershed Council and NOAA Fisheries staff on July 2, 2002, and October 9, 2002.

On November 19, 2002, NOAA Fisheries sent a non-concurrence letter and request for formal consultation to the COE. NOAA Fisheries did not concur with the action agency's finding that the proposed project is NLAA because juvenile steelhead may be present in the action area during the Oregon Department of Fish and Wildlife's (ODFW) in-water work window<sup>1</sup> and could be adversely affected by the proposed in-water construction activities. Precautions would need to be taken to minimize the potential for adverse affects to MCR steelhead.

On March 21, 2003, NOAA Fisheries received a complete, updated biological assessment (BA), essential fish habitat (EFH) assessment, and request from the COE for ESA section 7 formal consultation and EFH consultation for the Mills Dam Fish Passage Project. The COE proposes to authorize the Hood River County Soil and Water Conservation District (Hood River SWCD) for implementation of a fish passage improvement project on Tieman Creek, a tributary to the East Fork Hood River, near the community of Hood River, Oregon. The purpose of the proposed action is to improve fish passage by constructing three boulder weirs downstream of Mills Dam, the current water diversion structure. Mills Dam currently creates a two-foot drop, which exceeds the recommended six-inch maximum height for juvenile passage. The proposed weirs would incrementally raise the water surface elevation such that juveniles would not have to jump more than six inches in a single jump. The COE proposes to issue the permit under regulatory authority found in section 404 of the Clean Water Act.

The COE has determined that the Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*) occurs within the project area. MCR steelhead were listed as threatened under the ESA on March 25, 1999 (64 FR 14517). NOAA Fisheries applied protective regulations to MCR steelhead under section 4(d) of the ESA on July 10, 2000 (65 FR 42422).

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<sup>1</sup> Telephone conversation with Steve Pribyl, ODFW (June 25, 2002) confirming possibility of rainbow-like juveniles, likely to be MCR steelhead, in project area during the ODFW in-water work window.

This biological opinion (Opinion) reflects the results of the consultation process. The objective of this Opinion is to determine whether the proposed actions are likely to jeopardize the continued existence of the MCR steelhead, and to explain why NOAA Fisheries believes the proposed action will adversely effect essential fish habitat (EFH).

## **1.2 Proposed Actions**

Proposed actions are defined in NOAA Fisheries' regulations (50 CFR 402.02) as "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas." Because the COE proposes to issue the permit under regulatory authority found in section 404 of the Clean Water Act, it must consult under ESA section 7(a)(2).

The COE proposes to authorize the Hood River SWCD implementation of a fish passage improvement project on Tieman Creek, a tributary to the East Fork Hood River, near the community of Hood River, Oregon. The purpose of the proposed action is to improve fish passage by constructing three boulder weirs downstream of Mills Dam, the current diversion structure. Mills Dam consists of concrete posts and wing walls, with "stop logs" placed during irrigation season to create a backwatered-pool. Up to 0.188 cubic feet per second (cfs) of water is diverted from the pool through an existing, screened pipe during irrigation season. This diversion currently creates a two-foot drop, which exceeds the recommended six-inch maximum height for juvenile passage. The proposed weirs would incrementally raise the water surface elevation such that juveniles would not have to jump more than six inches in a single jump.

All instream work, including weir construction, site isolation, and fish salvage, will be supervised by fish biologists from Confederated Tribes of the Warm Springs (CTWS) and ODFW. Weir construction, site isolation, and fish salvage are planned for completion in one day. Instream work will be scheduled within the ODFW approved instream work window, July 15 - October 30, 2003.

### **1.2.1 Weir Construction**

According to the BA, the project will consist of three rock weirs below the dam to raise the water elevation a total of 18 inches, in steps, up to the dam. This would leave a maximum of a six-inch jump between the pool below the dam and the top of the stop logs. Weirs would be placed approximately six to eight feet apart. Each weir would consist of boulders one to three feet in diameter placed across the creek and set into the streambank a distance of two feet on each side. The top of the weirs would be sloped in a gentle "v" shape (cross channel shape) so that fish could ascend the weirs at all flows.

The initial or bottom boulders will be gently tamped into the streambed, or, if needed, streambed sediment and gravels will be dug away by hand so that the boulders will be placed on hard streambed materials. Any sediment or gravel removed would be integrated back into the weir

structure. Weir construction will be conducted “in the dry” to minimize erosion and water quality impacts during construction.

### **1.2.2 Work Site Isolation, Water Quality Protection, and Fish Salvage**

At the existing concrete dam and stop log structure, the stream will be isolated using sandbags and Visquine plastic sheeting and then diverted into one or two eight-inch diameter PVC pipes. The water will be returned to the stream channel at a location below the work area (approximately 22 feet). To minimize downstream water turbidity during re-watering of stream work area, streamflow will be returned slowly to the channel in stages over several hours.

Any fish present will be salvaged under the supervision of an ODFW fish biologist. Fish salvage will occur using handnets and possibly a backpack electrofisher. Fish caught will be counted and identified to species by ODFW, and then released upstream or downstream of the work site.

### **1.2.3 Equipment, Materials, and Work Site Access**

A small backhoe with tires or tracks will be the primary piece of equipment used for weir construction. The backhoe will be operated from the bank and the backhoe operator will be experienced in stream restoration. In addition, some handwork is anticipated using shovels and iron bars to move boulders and materials into the desired position. The boulders are native round river rock stockpiled on the landowner’s property. Boulder materials will be clean and free of sediment. Access for heavy equipment will be through a pasture, and will include a small amount of disturbance to riparian vegetation on the west bank of the creek. Removal and disturbance of riparian vegetation will be minimized to the greatest extent possible, and no trees will be removed that are greater than eight inches diameter at breast height (dbh). The Hood River SWCD will re-vegetate disturbed areas with native grasses immediately and a mix of deciduous and conifer tree seedlings will be planted between November 2003 and April 2004.

### **1.2.4 Removal of Stop Logs**

The rock weir structures will create a backwatered-pool. This pool may be deep enough to provide the landowner with his 0.188 cfs water withdrawal during irrigation season. If the pool is deep enough, there would no longer be a need to use the stop logs in the existing diversion structure and therefore the landowner would cease use of the stop logs. The landowner and ODFW will fully assess this option after the rock weirs are in place.

### **1.2.5 Project Monitoring**

To insure that the rock weirs perform as intended, and that no adverse channel changes or streambank erosion occurs, the project will be inspected after construction by the Hood River SWCD for a period of five years at a wide range of flow levels from high to low, and for a minimum of one year by ODFW. Fish passage effectiveness of the weirs will be visually assessed. Channel geometry will be measured by Hood River SWCD and recorded along four

transects within and below the reach where work will occur. Measurements will include stream width and depths at one-foot intervals. Substrate will be characterized visually at all transects. “Before and after” photographs of the affected stream reach will be taken at a minimum of three photo points. In the event that the weirs are not performing as intended, they will be modified with help from ODFW.

## **2. ENDANGERED SPECIES ACT**

### **2.1 Biological Opinion**

#### **2.1.1 Evaluating Proposed Actions**

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR 402.02 (the consultation regulations). In conducting analyses of habitat-altering actions under section 7 of the ESA, NOAA Fisheries uses the consultation regulations combined with the Habitat Approach (NMFS 1999) in the following steps: (1) Consider the status and biological requirements of the species; (2) evaluate the relevance of the environmental baseline in the action area to the species’ current status; (3) determine the effects of the proposed or continuing action on the species; (4) consider cumulative effects; and (5) determine whether the proposed action, in light of the above factors, is likely to jeopardize the continued existence of species survival in the wild. In completing this step of the analysis, NOAA Fisheries determines whether the action under consultation, together with all cumulative effects, and added to the environmental baseline, is likely to jeopardize the ESA-listed species. If the action is likely to jeopardize the species, NOAA Fisheries will identify reasonable and prudent alternatives for the action that would avoid jeopardy.

##### **2.1.1.1 Biological Requirements**

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed steelhead is to define the species’ biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species, taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list MCR steelhead for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for MCR steelhead to survive and recover to naturally-reproducing population levels, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.



For this consultation, the biological requirements are improved habitat characteristics that function to support successful spawning, adult and juvenile migration, and rearing ( *i.e.*, removing fish passage barriers to allow access to upstream habitat). The current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed.

#### **2.1.1.2 Environmental Baseline**

The range-wide status of the identified ESU may be found in Busby, *et al.* (1995). The identified action will occur within the range of MCR steelhead. The defined action area is the area that is directly and indirectly affected by the action. The direct effects occur at the project site and may extend upstream or downstream, based on the potential for impairing fish passage, stream hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect effects may occur throughout the watershed, where the action described in this Opinion leads to additional activities, or affect ecological functions, thus contributing to stream degradation. As such, the action area for the proposed activities includes the immediate portions of the watershed containing the project and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this Opinion, the action area is defined as the streambed and riparian habitat of Tieman Creek, beginning at the downstream extent of the turbidity plume below the rock weirs, to immediately upstream of the water diversion site. Other areas of the Columbia River basin are not expected to be directly or indirectly impacted.

The most recent evaluation of the environmental baseline for the Columbia River basin is part of the NOAA Fisheries's Opinion for the Federal Columbia River Power System (FCRPS) issued in December 2000 (NMFS 2000). This Opinion assessed the entire Columbia River system below Chief Joseph Dam and downstream to the farthest point (the Columbia River estuary and nearshore ocean environment) at which listed salmonids are influenced. A detailed evaluation of the environmental baseline of the Columbia River basin can be found in the FCRPS Opinion.

The quality and quantity of freshwater habitats in much of the Columbia River basin have declined dramatically in the last 150 years. Forestry, farming, grazing, road construction, hydrosystem development, mining, and urbanization have radically changed the historical habitat conditions of the basin. Depending on the species, they spend from a few days to one or two years in the Columbia River and its estuary before migrating out to the ocean and another one to four years in the ocean before returning as adults to spawn in their natal streams.

Water quality in streams throughout the Columbia River basin has been degraded by human activities such as dams and diversion structures, water withdrawals, farming and grazing, road construction, timber harvest activities, mining activities, and urbanization. Tributary water quality problems contribute to poor water quality where sediment and contaminants from the tributaries settle in mainstem reaches and the estuary. Temperature alterations also affect salmonid metabolism, growth rate, and disease resistance, as well as the timing of adult migrations, fry emergence, and smoltification. Many factors can cause high stream

temperatures, but they are primarily related to land-use practices rather than point-source discharges. Loss of wetlands and increases in groundwater withdrawals have contributed to lower base-stream flows, which in turn contribute to temperature increases. Channel widening and land uses that create shallower streams also cause temperature increases.

Pollutants also degrade water quality. Salmon require clean gravel for successful spawning, egg incubation, and emergence of fry. Fine sediments clog the spaces between gravel and restrict the flow of oxygen-rich water to the incubating eggs. Excess nutrients, low levels of dissolved oxygen, heavy metals, and changes in pH also directly affect the water quality for salmon and steelhead.

Water quantity problems are also a significant cause of habitat degradation and reduced fish production. Withdrawing water for irrigation, urban, and other uses can increase temperatures, smolt travel time, and sedimentation. Return water from irrigated fields can introduce nutrients and pesticides into streams and rivers. On a larger landscape scale, human activities have affected the timing and amount of peak water runoff from rain and snowmelt. Many riparian areas, flood plains, and wetlands that once stored water during periods of high runoff have been developed. Urbanization paves over or compacts soil and increases the amount and pattern of runoff reaching rivers and streams.

Tieman Creek is a tributary to East Fork Hood River, which flows into Hood River at river mile 12.2, and then into the Columbia River. Many of the issues affecting the Columbia River basin as a whole are also specifically affecting the Tieman Creek drainage, including forestry, water withdrawals, farming, grazing, and road construction. Although there is scarce published scientific data on Tieman Creek, the landowner, watershed coordinator, and local ODFW biologist were able to provide important habitat information. Important habitat indicators relative to this fish passage project include stream flow/hydrology, riparian vegetation, temperature, water quality, and physical barriers. According to an ODFW fish biologist<sup>2</sup>, there is the possibility that juvenile steelhead could be present in the action area during the in-water work window, although juvenile steelhead have not been directly observed in this reach of the stream in recent history.

#### Stream Flow/Hydrology

According to the Hood River watershed coordinator, there is a steady year-round flow on Tieman Creek, with winter time base flows being approximately five cfs and summertime low flows at about 1.75 cfs. The summertime low flow includes approximately 0.5 cfs return flow from upstream irrigation fields. The landowner has a water right to divert 0.188 cfs from April through October each year for pasture irrigation.

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<sup>2</sup> Telephone conversation with Steve Pribyl, ODFW (June 25, 2002) confirming possibility of rainbow-like juveniles, likely to be MCR steelhead, in project area during the ODFW in-water work window.

Also, this is a fairly low-energy stream that would be characterized as a Rosgen “B” channel type. According to the BA, the stream has no recorded history of flooding over the bank. Stream widths below the current dam are 7-13 feet.

### Riparian Vegetation

From observation on site visits on July 2, and October 9, 2002, there is lush riparian vegetation (approximately 30 feet wide on each side of the stream) in the project area, and the banks appear to be stable. The riparian vegetation includes grasses, shrubs (including snowberry, lady fern, and skunk cabbage), deciduous trees (including alder and dogwood), and a few conifers.

### Temperature

According to the Hood River watershed coordinator, temperature has only recently been monitored on this stream. According to data collected in 2001, the maximum seven-day average (recorded in August) was 17.4 degrees Celsius (approximately 64 degrees Fahrenheit). This is below the threshold of concern for Oregon State Department of Environmental Quality (DEQ) guidelines, and would be considered “at risk” according to NOAA Fisheries’ Matrix of Pathways and Indicators (NMFS 1996).

### Water Quality

Because of upstream agricultural practices, Tieman Creek has a moderately elevated level of fine sediment, nitrogen and fecal coliform. The sediment load is further increased with naturally-occurring glacial till. Tieman Creek was not analyzed by DEQ during its 1988 survey of the Hood River basin. According to the Hood River watershed coordinator, efforts are ongoing to improve the water quality conditions in this drainage.

### Fish Passage

The fish barrier which this project will eliminate is approximately 1.1 miles from the confluence of Tieman Creek with East Fork Hood River. Below this barrier there are no known physical barriers in Tieman Creek or East Fork Hood River. The barrier currently limits upstream migration of juvenile MCR steelhead and adult MCR steelhead from April to October. Although no salmonids have been observed on this stream in recent history, Tieman Creek is historic MCR steelhead area. Access to one mile of historic anadromous habitat (spawning and rearing) would be made available, although it is unknown the precise amount of spawning habitat this project would make available because of the water quality issues. Tieman Creek may be a valuable refuge during winter high events/mud flows for juveniles trying to find a habitat.

## **2.1.2 Analysis of Effects**

### **2.1.2.1 Effects of Proposed Action**

NOAA Fisheries’ jeopardy analysis includes an evaluation of the effects of proposed actions on listed steelhead within the context of species survival with an adequate potential for recovery under the effects of the proposed action. The action also must restore, maintain, or at least not

appreciably interfere with the recovery of the properly functioning condition (PFC) of the various fish habitat within a watershed.

Important habitat indicators that might be affected by this fish passage project include stream flow/hydrology, riparian vegetation, temperature, water quality and physical barriers. Additionally, direct effects, such as displacement and death, should be considered.

#### Stream Flow/Hydrology

The overall rate of stream flow will not be effected by this project, as the water withdrawal will not be changed by implementing this action. Also, the timing of low and high flows will not be altered.

#### Riparian Vegetation

From observation on site visits on July 2, and October 9, 2002, there is lush riparian vegetation in the project area and the banks appear to be stable. The construction of access paths for heavy equipment will result in some native and non-native riparian vegetation removal. Only minor amounts of riparian vegetation will be lost because the scale of the project is small, few access paths will be needed, and the smallest and lightest available machinery will be used. To further minimize the functional losses associated with vegetation removal, all disturbed areas will be replanted with native grasses immediately and a mix of deciduous and conifer tree seedlings by the end of the following spring.

#### Temperature

Because a small amount of riparian vegetation will be removed, a negligible, short-term increase in water temperature may result. There should be no long-term increase as no trees greater than eight inches dbh will be removed, and a mix of fast growing deciduous and conifer trees will be planted in disturbed areas.

#### Water Quality

This project would have no long-term, adverse effects on water quality of Tieman Creek. However, it is reasonably certain that there would be a short-term adverse effect on juveniles with regard to sedimentation during the construction of the project.

Salmonids have evolved in systems that periodically experience short-term pulses (days to weeks) of high suspended sediment loads, often associated with flood events, and are adapted to such high pulse exposures. Behavioral effects on fish, such as gill-flaring and feeding changes, have been observed in response to pulses of suspended sediment (Berg and Northcote 1985). Adult and larger juvenile salmonids may be little affected by the high concentrations of suspended sediments that occur during storm and snowmelt runoff episodes (Bjornn and Reiser 1991). Newly emerged salmonid fry may be vulnerable to even moderate amounts of turbidity (Bjornn and Reiser 1991). Also, turbidity, at moderate levels, has the potential to adversely

affect primary and secondary productivity (Spence *et al.* 1996). However, because the potential for turbidity should be localized and brief, and the fish present are likely to be juveniles, the direct and indirect effects due to sedimentation are expected to be minimal, temporary, and localized.

#### Fish Passage

Fish passage will be improved as a result of this project. This project is designed to eliminate the current barrier by ensuring that no jump would be greater than six inches, which is the recommended height to allow for upstream juvenile passage. The current diversion creates a barrier to juveniles and adults moving upstream during the irrigation season, which is usually April to October. Although no salmonids have been observed on this stream in recent history, this is historic MCR steelhead area. Eliminating the current barrier would provide year-round access to approximately one mile of potential spawning and rearing MCR steelhead habitat on Tieman Creek.

#### Direct Take and Chemical Contamination

Use of heavy equipment during construction creates the opportunity for direct injury or mortality through mechanical injury from equipment in the water. Also, as with all construction activities, accidental release of fuel, oil, and other contaminants may occur. Operation of the back-hoes, excavators, and other equipment requires the use of fuel, lubricants, *etc.*, which, if spilled into the channel of a water body or into the adjacent riparian zone, can injure or kill aquatic organisms. Petroleum-based contaminants (such as fuel, oil, and some hydraulic fluids) contain poly-cyclic aromatic hydrocarbons (PAHs), which can be acutely toxic to salmonids at high levels of exposure and can also cause chronic lethal and acute and chronic sublethal effects to aquatic organisms (Neff 1985).

Construction-related effects necessary to complete the proposed action will be minimized by completing the in-water work during low flow periods and by isolating the in-stream work area. Construction equipment will work from the banks and no construction equipment will enter the flowing water as a result of this proposed action.

As a result of the Mills Dam Fish Passage Project, approximately 25 feet of the channel will be de-watered. Rescue, salvage and relocation of fish and other aquatic species will result in the potential capture and handling of up to 30 juvenile MCR steelhead.<sup>3</sup> Assuming a 5% direct or delayed mortality rate from capture and relocation stress, up to two juvenile listed salmonids may be killed.

#### Net effect

For the proposed action, NOAA Fisheries expects that the effects of the proposed project will tend to maintain or move towards restoration of each of the habitat elements over the long term. However, in the short term, a temporary increase in sedimentation and turbidity, and disturbance

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<sup>3</sup> E-mail communication with Steve Pribyl, ODFW (March 25, 2003) confirming that no more than 30 juvenile MCR steelhead are likely to be in project area during the ODFW in-water work window.

of riparian and instream habitat are expected. Fish will be temporarily displaced, and possibly injured or killed during work isolation and fish salvage. The net effect from the proposed action, is the maintenance and restoration of functional steelhead habitat conditions.

#### **2.1.2.2 Cumulative Effects**

Cumulative effects are defined in 50 CFR 402.02 as “those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation”. Other activities within the watershed have the potential to impact fish and habitat within the action area. A wide variety of actions including grazing, irrigation, and timber harvest occur within the Tieman Creek drainage and the Columbia River basin. NOAA Fisheries assumes that future private and state actions will continue within the watershed, but at increasingly higher levels as population density climbs.

#### **2.1.3 Conclusion**

After reviewing the current status of MCR steelhead, the environmental baseline for the action area, the effects of the proposed Mills Dam Fish Passage Project and cumulative effects, it is NOAA Fisheries’ opinion that this project, as proposed, is not likely to jeopardize the continued existence of MCR steelhead. NOAA Fisheries believes that the proposed action would cause a minor, short-term increase in stream turbidity in Tieman Creek downstream from the project area. In the long term, survival and safe passage conditions for adult and juvenile MCR steelhead will be improved. Although direct mortality of juvenile MCR steelhead from this project could occur during in-water work, the level of potential mortality would be minimal and would not result in jeopardy.

These conclusions are based on the following considerations: (1) Installation of the three rock weirs will allow access by MCR steelhead to previously unavailable spawning and rearing habitat during irrigation season; (2) work will be conducted “in the dry” and within the ODFW designated in-water work period to decrease the likelihood of encountering fish during construction; (3) revegetation of the banks will result in long-term improvement of riparian resources; and (4) NOAA Fisheries expects that the net effect of the proposed action will be to maintain or help restore properly functioning habitat conditions in the project area of Tieman Creek.

Thus, the proposed action is not expected to impair properly functioning habitats, appreciably reduce the functioning of already impaired habitats, or retard the long-term progress of impaired habitats toward proper functioning condition essential to the long-term survival and recovery at the population or ESU level.

#### **2.1.4 Conservation Recommendations**

Conservation recommendations are defined as “discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the

development of information” (50 CFR 402.02). Section 7 (a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. NOAA Fisheries suggests that the stop logs for the current diversion structure be permanently removed, as the new rock weirs should create a backwatered-pool large enough for the landowner to take his allotted water right without the need for any stop logs. According to the BA, if the stop logs are still needed after construction of the rock weirs, no more than six inches should exist between the pool below the stop logs and the top of stop logs. If this height is greater than six inches, NOAA Fisheries recommends that the rock weir structure be modified or the top stop log be modified to include a “v” notch adequate for juvenile passage. If the modification causes an effect on listed species that was not previously considered, reinitiation of consultation would be necessary.

### **2.1.5 Reinitiation of Consultation**

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: (1) The amount or extent of taking specified in the incidental take statement is exceeded; (2) new information reveals effects of the agency action that may affect listed species in a manner or to an extent not considered in this Opinion; (3) the action is modified (*e.g.*, if the weirs are not performing as intended and a design modification becomes necessary to correct the situation) in a way that causes an effect on listed species that was not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of authorized incidental take is exceeded, any operations causing such take must cease pending conclusion of the reinitiated consultation.

## **2.2 Incidental Take Statement**

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. “Harm” is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. “Harass” is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to breeding, feeding, and sheltering. “Incidental take” is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

### **2.2.1 Amount and Extent of the Take**

NOAA Fisheries anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of MCR steelhead because of harm from increased sediment levels (non-lethal), the potential for direct incidental take during isolation of the work area (lethal and non-lethal), and delayed mortality due to handling during the fish removal process. Effects of actions such as the placement of rock weirs in the channel and increased sediment levels are largely unquantifiable in the short term, and are not expected to be measurable as long-term harm to habitat features or by long-term harm to MCR steelhead behavior or population levels. Therefore, even though NOAA Fisheries expects some low level of incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take to the species itself. In instances such as these, NOAA Fisheries designates the expected level of take as “unquantifiable”. Based on the information in the BA, NOAA Fisheries anticipates that an unquantifiable amount of incidental take is reasonably certain to occur as a result of the actions covered by this Opinion.

In addition, NOAA Fisheries expects that the possibility exists for handling MCR steelhead during the work isolation process, which will result in incidental take to individuals during the construction period. NOAA Fisheries anticipates that incidental take of up to 30 juvenile MCR steelhead could occur as a result of the fish removal process due to dewatering and rewatering of the channel. Two of these juveniles may be wounded or killed, and 30 may be harassed. The extent of the take is limited to MCR steelhead within the action area. The extent of the take for this fish passage improvement project includes the streambed and streambank of Tieman Creek, beginning at the downstream extent of the turbidity plume below the rock weir placements, to immediately upstream of the work isolation area.

### **2.2.2 Reasonable and Prudent Measures**

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of MCR steelhead resulting from implementation of this Opinion. The COE shall:

1. Minimize the likelihood of incidental take from rock weir construction actions by using an approach that maximizes the maintenance or improvement of ecological functions.



2. Minimize the likelihood of incidental take from activities involving rock weir construction, use of heavy equipment, site restoration, or that may otherwise involve in-water work or affect fish passage by avoiding or minimizing disturbance to riparian and aquatic systems.
3. Minimize the likelihood of incidental take from in-water work activities by ensuring that the in-water work activities (rock weir construction) are isolated from flowing water.
4. Complete a comprehensive monitoring and reporting program to ensure that implementation of these conservation measures is effective in minimizing the likelihood of take from permitted activities.

### **2.2.3 Terms and Conditions**

To be exempt from the prohibitions of section 9 of the ESA, COE must comply with the following terms and conditions, which implement the reasonable and prudent measures described above for each category of activity.

1. To implement reasonable and prudent measure #1 (rock weir construction), the COE shall ensure that:
  - a. The use of rock and riprap is minimized.
    - i. Rocks will be individually placed in a way that produces an irregularly-contoured face to provide velocity disruption.
    - ii. No end dumping will be allowed.
  - b. Any in-stream large wood or riparian vegetation that is moved or altered during construction will stay on site, be replaced during site restoration, or be replaced with a functional equivalent.
  - c. Where feasible, the bankline will be revegetated using natural vegetation.
2. To implement reasonable and prudent measure #2 (rock weir construction, use of heavy equipment, site restoration, or that may otherwise involve in-water work or affect fish passage), the COE shall ensure that:
  - a. Project design. Alteration or disturbance of the stream banks and existing riparian vegetation will be minimized.
  - b. In-water work. All work within the active channel will be completed within the in-water work period of July 15 - October 30 for the site as recommended by ODFW. Extensions of the in-water work period must be approved by NOAA Fisheries.
  - c. Pollution and erosion control plan. A pollution and erosion control plan (PECP) will be developed for the project to prevent point-source pollution related to construction operations. The PECP will contain the pertinent elements listed below and meet requirements of all applicable laws and regulations:

- i. Measures will be taken to prevent erosion and sedimentation associated with access roads, construction sites, equipment and material storage sites, fueling operations and staging areas.
  - ii. A description of the hazardous products or materials that will be used, including inventory, storage, handling, and monitoring.
  - iii. A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment.
  - iv. Measures will be taken to prevent construction debris from falling into any aquatic habitat. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.
- d. Pre-construction activities. Prior to alteration of the action area, the following actions will be accomplished:
  - i. Boundaries of the clearing limits associated with site access and construction are flagged to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
  - ii. A supply of erosion control materials (*e.g.*, silt fence and straw bales) is on hand to respond to sediment emergencies. Sterile straw or hay bales will be used when available to prevent introduction of weeds.
  - iii. All temporary erosion controls (*e.g.*, straw bales, silt fences) are in-place and appropriately installed downslope of project activities within the riparian area. Effective erosion control measures will be in-place at all times during the contract, and will remain and be maintained until such time that permanent erosion control measures are effective.
- e. Earthwork. Earthwork, including drilling, blasting, excavation, dredging, filling and compacting, is completed in the following manner:
  - i. Boulders, rock, woody materials and other natural construction materials used for the project, must be obtained from outside of the riparian area or as otherwise approved by NOAA Fisheries.
  - ii. Material removed during excavation will only be placed in locations where it cannot enter streams or other waterbodies.
  - iii. All exposed or disturbed areas will be stabilized to prevent erosion.

- (1) Areas of bare soil within 150 feet of waterways, wetlands or other sensitive areas will be stabilized by native seeding,<sup>4</sup> mulching, and placement of erosion control blankets and mats, if applicable, quickly as reasonable after exposure, but within seven days of exposure.
    - (2) All other areas will be stabilized as quickly as reasonable, but within 14 days of exposure.
    - (3) Seeding outside of the growing season will not be considered adequate for permanent stabilization.
  - f. Heavy Equipment. Heavy equipment will be fueled, maintained and stored as follows:
    - i. Vehicle staging, maintenance, refueling, and fuel storage areas will be a minimum of 150 feet horizontal distance from any stream.
    - ii. All vehicles operated within 150 feet of any stream or water body will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation.
    - iii. When not in use, vehicles will be stored in the vehicle staging area.
  - g. Site restoration. Site restoration and clean-up, including protection of bare earth by seeding, planting, mulching, and fertilizing, will be done in the following manner:
    - i. Disturbed areas will be planted with native vegetation specific to the project vicinity and/or the region of the state where the project is located, and will comprise a diverse assemblage of woody and herbaceous species.
    - ii. No herbicide application will occur as part of this permitted action. Mechanical removal of undesired vegetation and root nodes is permitted.
    - iii. No surface application of fertilizer will be used within 50 feet of any stream channel as part of this permitted action.
    - iv. Plantings will achieve an 80% cover success after five years.
      - (1) If success standard has not been achieved after five years, the applicant will submit an alternative plan to NOAA Fisheries. This alternative plan will address temporal loss of function.
      - (2) Plant establishment monitoring will continue, and monitoring reports will be submitted to NOAA Fisheries on an annual basis for at least five years, and until site restoration success has been achieved.
3. To implement reasonable and prudent measure #3, the COE shall ensure that the in-water work activities (rock weir construction), are isolated from flowing water.

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<sup>4</sup> By Executive Order 13112 (February 3, 1999), Federal agencies are not authorized to permit, fund or carry out actions that are likely to cause, or promote, the introduction or spread of invasive species. Therefore, only native vegetation that is indigenous to the project vicinity, or the region of the state where the project is located, shall be used.

- a. Isolation of in-water work area. If adult or juvenile fish are reasonably certain to be present, the work area will be well isolated from the active flowing stream using inflatable bags, sandbags, sheet pilings, or similar materials. The work area will also be isolated if in-water work may occur within 300 feet upstream of spawning habitats.
- b. Capture and release. Before and intermittently during pumping to isolate an in-water work area, an attempt must be made to capture and release fish from the isolated area using trapping, seining, electrofishing, or other methods as are prudent to minimize risk of injury.
  - i. A fishery biologist experienced with work area isolation and competent to ensure the safe handling of all ESA-listed fish must conduct or supervise the entire capture and release operation.
  - ii. If electrofishing equipment is used to capture fish, the capture team must comply with NOAA Fisheries' electrofishing guidelines.<sup>5</sup>
  - iii. The capture team must handle ESA-listed fish with extreme care, keeping fish in water to the maximum extent possible during seining and transfer procedures to prevent the added stress of out-of-water handling.
  - iv. Captured fish must be released as near as possible to capture sites.
  - v. If a dead, injured, or sick listed species specimen is found, initial notification must be made to the NOAA Fisheries Law Enforcement Office, in the Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, WA 98661; or call 360.418.4246. Care should be taken in handling sick or injured specimens to ensure effective treatment and care. Dead specimens should be handled to preserve biological material in the best possible state for later analysis of cause of death. With the care of sick or injured listed species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed.
  - vi. The COE shall ensure that no ESA-listed fish are transferred to third parties other than NOAA Fisheries personnel without prior written approval from the NOAA Fisheries.
  - vii. Other Federal, state, and local permits necessary to conduct the capture and release activity must be obtained.
  - viii. NOAA Fisheries or its designated representative must be allowed to accompany the capture team during the capture and release activity, and must be allowed to inspect the team's capture and release records and facilities.
  - ix. A description of any seine and release effort will be included in a post project report, including the name and address of the supervisory fish biologist, methods used to isolate the work area and minimize

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<sup>5</sup> National Marine Fisheries Service, *Backpack Electrofishing Guidelines* (December 1998) (<http://www.nwr.noaa.gov/1salmon/salmesa/pubs/electrog.pdf>).

- disturbances to ESA-listed species, stream conditions before and following placement and removal of barriers, the means of fish removal, the number of fish removed by species, the condition of all fish released, and any incidence of observed injury or mortality.
- x. After completion of the project the existing channel should be re-watered in a way that will not significantly impact water quality or cause fish stranding.
4. To implement reasonable and prudent measure #4 (monitoring and reporting), the COE shall ensure that:
- a. Within 120 days of completing the project, the COE shall ensure submittal of a monitoring report to NOAA Fisheries describing the COE's success meeting their permit conditions. This report will consist of the following information:
- i. Project identification.
- (1) Project name;
- (2) starting and ending dates of work completed for this project; and
- (3) the COE contact person.
- ii. Pollution and erosion control. A summary of all pollution and erosion control inspection reports, including descriptions of any failures experienced with erosion control measures, efforts made to correct them and a description of any accidental spills of hazardous materials.
- iii. Site restoration. Documentation of the following conditions:
- (1) Finished grade slopes and elevations;
- (2) log and rock structure elevations, orientation, and anchoring, if any;
- (3) planting composition and density; and
- (4) a plan to inspect and, if necessary, replace failed plantings and structures for a period of five years.
- iv. Photographic documentation of environmental conditions at the project site before, during and after project completion.
- (1) Photographs will include both general project location views and close-ups showing details of the project area and project, including pre- and post-construction.
- (2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
- (3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.
- b. On an annual basis, for five years after completing the project, the COE shall ensure submittal of a monitoring report to NOAA Fisheries describing the COE's

success in meeting their site restoration goals. This report will consist of the following information:

- i. Project identification.
    - (1) Project name;
    - (2) starting and ending dates of work completed for this project; and
    - (3) the COE contact person.
  - ii. Site restoration. Documentation of the following conditions:
    - (1) Any changes in log and rock structure elevations and orientation;
    - (2) any changes in planting composition and density; and
    - (3) a plan to inspect and, if necessary, replace failed plantings and structures.
  - iii. Photographic documentation of environmental conditions at the project site after project completion as they relate to fish passage and site restorations goals as described above.
    - (1) Photographs will include general both project location views and close-ups showing details of the project area and habitat features of the channel relocated reaches.
    - (2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
    - (3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, as they relate fish passage and site restorations goals.
- c. Submit monitoring reports to:

NOAA Fisheries  
Oregon Habitat Branch, Habitat Conservation Division  
Attn: 2002/00391  
525 NE Oregon Street, Suite 500  
Portland, Oregon 97232-2778

### **3. MAGNUSON-STEVENSON ACT**

#### **3.1 Background**

The objective of the EFH consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

### **3.2 Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of EFH: “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH.
- NOAA Fisheries shall provide conservation recommendations for any Federal or state activity that may adversely affect EFH.
- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

### **3.3 Identification of EFH**

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: Chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those

streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information.

### **3.4 Proposed Actions**

The proposed actions are detailed above in section 1.2. The action area is defined as the streambed and riparian habitat of Tieman Creek, beginning at the downstream extent of the turbidity plume below the rock weirs, to immediately upstream of the work isolation area. This area has been designated as EFH for various life stages of chinook and coho salmon.

### **3.5 Effects of Proposed Action**

As described in detail in section 2.1.3, the proposed activities may result in detrimental short- and long-term adverse effects to a variety of habitat parameters. These impacts include increases in turbidity, disturbance to the beds and bank of the river, removal of riparian vegetation, and the potential for pollutants to enter the water.

### **3.6 Conclusion**

NOAA Fisheries believes that the proposed action will adversely affect the EFH for chinook and coho salmon.

### **3.7 EFH Conservation Recommendations**

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the COE and all of the reasonable and prudent measures and the terms and conditions contained in sections 2.2.2 and 2.2.3, respectively, are applicable to salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

### **3.8 Statutory Response Requirement**

Please note that the MSA (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the



adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

### **3.9 Supplemental Consultation**

The COE must reinitiate EFH consultation with NOAA Fisheries if either action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

## **4. LITERATURE CITED**

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this opinion.

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